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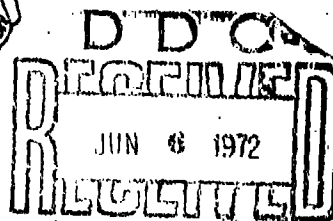
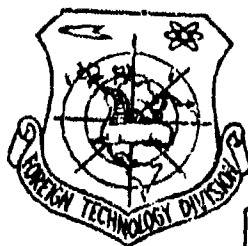
FOREIGN TECHNOLOGY DIVISION



ATOMIZER

by

A. A. Belokrylov



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11. ABSTRACT

A description is given of an atomizer for gas turbines, as a modification of existing liquid fuel atomizers incorporating a plug with tangential swirl grooves, which does not provide a good spray under higher loads. To retain the quality of the spray under various loads the grooved plug is made of an elastic material. The plug compresses under an increased fuel pressure and forms an opening through which fuel also passes to the nozzle. [A.O153702]

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By. A. A. Belokrylov

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ATOMIZER

A. A. Belokrylov

This invention pertains to atomizers for spraying liquid fuel and it can be used in gas turbine engines using liquid fuel.

There are known atomizers for spraying liquid fuel, consisting of a housing, union nut, gasket washer, and an insert with tangential channels for supplying fuel to a central nozzle.

However, such atomizers do not insure qualitative spraying during variable fuel consumption.

The purpose of this invention is to eliminate this disadvantage. To attain this purpose, the insert is made flexible subject to deformation under fuel pressure.

Figure 1 shows the proposed atomizer, in longitudinal cross-section; Figure 2 - the same, cross-section into A - A in Fig. 1.

The atomizer consists of casing 1 and union nut 2 for advancing the atomizer, gasket washer 3, elastic insert 4 with tangential channels 5 for supplying fuel to central nozzle 6 and also reducer 7 with channels 8.

The atomizer works in the following manner. Fuel from casing 1 enters cavity 9 of elastic insert 4 to channels 8 of reducer 7 and,

during small consumptions, through tangential channels 5 to central spraying nozzle 6. With increased consumption, elastic insert 4 deforms under fuel pressure and the fuel begins to flow toward central nozzle 6 not only through tangential channels 5 but also through the crack formed between insert 4 and reducer 7. In this way the necessary fuel consumption is insured without sacrificing the spraying quality.

OBJECT OF THE INVENTION

The atomizer for spraying liquid fuel consists of a casing, union nut to supply the fuel, gasket washer, and an insert with tangential channels for supplying fuel to the central nozzle is distinguished in that to insure a qualitative spraying of fuel during variable consumption the insert is made flexible, subject to deformation under the fuel pressure.

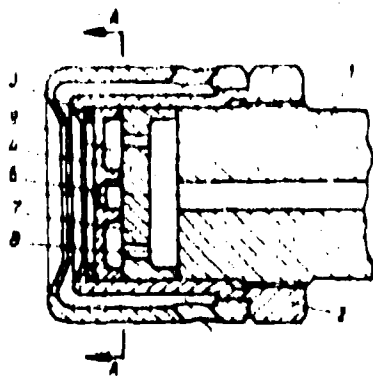


Fig. 1.

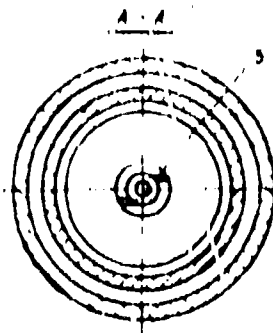


Fig. 2.